



Analysis of gravity waves (GWs) in mesospheric temperatures from SABER

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The SABER instrument has now performed well for more than four years of continuous measurements from the tropopause into the thermosphere. We analyzed temperature data between 15km and 120km altitude for GWs. A main task in this analysis is to distinguish GWs from other kind of waves. We isolate GWs by subtracting a background atmosphere estimated by a zonal wavenumber 0-6 Kalman filter treating ascending and descending portions of the orbit separately. Planetary waves appear in-phase in the Kalman estimates for the ascending and descending nodes, whereas migrating and non-migrating tides can be seen in the differences of the two estimates. We discuss multi-year time series of mesospheric GW activity and possible interactions with tides. The SABER results are compared to global modeling with the Warner and McIntyre parameterization scheme and the GROGRAT ray-tracer.